REMARKS

Entry of the foregoing amendments, and reexamination and reconsideration of the subject application, and in light of the following remarks, are respectfully requested.

Amendments

In the amendment entered pursuant to the Request for Continued Examination, claim 8 was re-written as an independent claim, and claims 11 and 12 were amended commensurate with what is agreed disclosed in the application. New claim 13 reads on Fig. 3.

In this further amendment, claims 1, 8, and 9 are amended to recite that the combination of elements makes a non-intumescent fire-protection panel, and the "consisting essentially of" transitional phrase previously added to the same effect (excluding intumescent materials) is now changed back to "comprising." No new matter is presented.

Rejection under 35 U.S.C. §112, first paragraph

The examiner has agreed that the specification provides support "for reflectance values for visible light of 15% or less (page 3)." (Final rejection, ¶1.) According, without prejudice or disclaimer, claims 11 and 12 have been amended to include that description, that the reflectance values are "15% or less." Accordingly, this rejection should now be withdrawn.

Rejections under 35 U.S.C. §103

The Advisory action (paper 20061129) alleges that the transitional phrase "consisting essentially of" renders claim 1 indefinite with respect to whether claim 8 would be excluded thereby. There is now no indefiniteness because intumescent materials are specifically excluded from all of the independent claims. This structure (non-intumescent construction) is supported in the specification (at least at the last two paragraphs on page one; *see* MPEP 2111.03). To avoid any possible ambiguity, as noted above, claim 8 is now presented in independent form.

In the previous final rejection, the examiner acknowledged that Friedman *et al.* is silent on the limitations of claim 8 but contended that the recited elements are still shown in the art. However, the presence of individual elements in the art does not render obvious their combination as particularly recited in claims 1, 8, and 9. The existence of isolated elements and/or features in the prior art that are also recited in the

rejected claims is not a sufficient basis for concluding that the combination of claimed elements would have been obvious, *Ex parte Hiyamizu*, 10 U.S.P.Q. 2d 1393 (B.P.A.I. 1988), absent some evidence that would impel persons of ordinary skill in the art to do what is presently claimed, for whatever reason. *Ex parte Levengood*, 28 U.S.P.Q.2d 1300 (B.P.A.I. 1993).

The recent advisory action (paper 20070322) alleged that "heat reflection" films for keeping buildings or vehicles warm or cool are analogous to the present fire-protection product. This basis for rejection is traversed: they are not analogous because there is a difference in kind between products designed to control the effect of infrared radiation on an indoor architectural environment, and those designed to prevent the architecture and items therein from bursting into flame. This difference is not merely a difference in degree. The claims have been amended to emphasize this difference. This difference is analogous to making impact-resistant glass, where one might make windshield glass resistant to stones thrown up by vehicles in front, versus bulletproof windshield glass. Both are concerned with impact, but the magnitude of the difference is so substantial that the artisan of ordinary skill as to one would consider the other to be non-analogous art.

In a previous Response (paper 20040910), applicants distinguished the only citations discussing wavelengths of transmitted, reflected, and absorbed radiation to show that the ones claimed, which are particular to fire protection, would not have been obvious. Mere reference by Friedman to some "heat reflectance" surface treatment (cited col. 6, ln. 26) does not render obvious the particular structure recited in the rejected claims. Friedman is referring to treatments mentioned in the background section of his disclosure, and perhaps those cited by the Office, yet together those disclosures do not render obvious the properties recited in claims 1, 8, and 9, properties that are uniquely related to fire protection. The proper question to ask is whether a fire-protection glass panel designer of ordinary skill, facing the wide range of needs created by developments in the field of endeavor, would have seen a benefit the combination structure claimed.[1] Because the Office has withdrawn the rejections based on those references allegedly describing the wavelength-based optical properties of their

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[1] "The proper question to have asked was whether a pedal designer of ordinary skill, facing the wide range of needs created by developments in the field of endeavor, would have seen a benefit to upgrading Asano with a sensor." *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. ____, *20 (Slip Op. 04-1350; Apr. 30, 2007).

invention, it would be improper to maintain the present rejections on references that disclose even less about the claimed wavelength regimes.

Terneu *et al.* shows double glazing structures with oxide coatings but is directed to thermal insulation "to reduce heat losses" from buildings (col. 1, ln. 8), not to fire protection; the word "fire" does not appear to be used at all in this reference. Arfsten *et al.* is directed to passive solar collectors (col. 2, ln. 57-62), and thus is also not directed to fire protection. So too, Benson *et al.*, directed to solar collection in a building or panel (col. 2, ln. 58-60) and Stephens, directed to reflecting solar heat from a building (col. 1, ln. 9-10), are not directed to fire protection panels. While oxide coatings may be used by these references, the function of the coating in solar IR reflection and collection panels is significantly different from IR reflection in fire protection, and that monumental difference would be appreciated by one of ordinary skill in the art. The extreme energy transport encountered and countered by fire protection panels is substantially greater than that with respect to panels reflecting solar radiation. Preventing articles from combusting by energy transport through glass (application at page one, second paragraph) is not a consideration in solar radiation panels, and there is no objective teaching from the references that one of ordinary skill in the fire protection art would look at solar radiation panels. The existence of a chemically similar coating is not sufficient to show that the art is analogous. There is nothing to show any equivalence recognized by the art; rather, the prior art cited against the claim are all directed to one or the other (*i.e.*, fire or solar radiation), not both. Accordingly, this group of references constitute non-analogous art with respect to the fire protection panel as explicitly claimed.

Thus, the only references in the final rejection related to fire protection are Friedman and Hentzelt. However, Hentzelt requires an intumescent material, which is now excluded from the rejected claims. Friedman teaches away from using an intumescent material, and applicants' claims positively exclude using an intumescent material. Hentzelt *et al.* shows at least one pair of panels and another panel separated by a gap, but between the pair of panels are intumescent layers (elements 2 and 4 in Fig. 1; elements 12 and 14 in Fig. 2; etc.) sandwiching a PVB layer. The combination of Friedman and Hentzelt is thus improper, and does not suggest the claimed invention, because Friedman teaches away from using both Hentzelt's intumescent and PVB (polyvinylbuytral) materials. Friedman teaches away from any fluorocarbon resin that is not 85 wt.% THV, as well as the PET claimed by applicants (*see* Friedman at col. 2, ln. 10-18). Friedman does not describe intumescent layers or PVB as alternatives that

can be included, but instead specifically states they "possess significant *disadvantages* that are *inherent*" (col. 2, ln. 16-18; emphases added). The claim combination of a heat reflective film on one of two plates sandwiching a non-intumescent resin layer (claim 1), and as part of a double glazed structure including the same (claim 8), would not have been obvious from Friedman and Hentzelt, and so this rejection should now be withdrawn. *E.g., Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc.*, 796 F.2d 443, 230 USPQ 416, 419-420 (Fed. Cir. 1986), *cert. den.*, 484 U.S. 823 (1987); *Dennison Manufacturing Company v. Panduit Corp.*, 475 US 809, 229 USPQ 478, 479 (1986); *In re Wesslau*, 147 USPQ 391, 393 (C.C.P.A. 1965); *In re Mercier*, 185 USPQ 774, 778 (C.C.P.A. 1975) ("all of the relevant teachings of the cited references must be considered in determining what they fairly teach to one having ordinary skill in the art.") Those teachings of the reference that lead one away from the claimed invention must be taken into account. *In re Marshall*, 198 U.S.P.Q. 344 (C.C.P.A. 1978). Friedman and Hentzelt are at odds with each other, and so this rejection should not be maintained.

Plumat describes a heat insulating screen for ovens or furnaces, especially for domestic appliances (col. 3, ln. 10-12). However, Plumat is concerned with reflecting radiation of 0.8-1.5μm (800-1500nm) as "the most important" for screening in an oven or furnace application (paragraph bridging cols. 3 and 4; claim 1). Reflection of light at 2.5μm (2500 nm) is 36% or 42% (Example 1), or 30% at 2μm (Example 11), well short of the 70% or more at 2.5μm (2500nm) claimed by applicants. Plumat requires a coating of copper (Example 10), which is not within the scope of the present claims, to achieve a reflectance of 85% at 2.5μm. Further, Plumat's Examples 10 and 14 are the only ones where the oven temperature tested was above the ignition point of paper (451° F.; 233° C.), and significantly below typical fire temperatures of 800°-900° C. (application at page 3, ln. 2-3). In the sole example (#8) where Plumat does use a resin intermediate layer, it is polyvinyl butyral, outside of the scope of the resin layer recited in the present claims.

Therefore, all of the rejections should be withdrawn. Only Friedman and Hentzelt are directed to fire protection glass, the other references being non-analogous. The present claims, and Friedman, specifically exclude intumescent materials such as in Hentzelt. The amended claims 1, 8, and 9 exclude intumescent materials and are consistent with applicants' disclosure at paragraphs 3-4, on page one, in that respect.

The rejection alleges that Hentzelt is used only for its disclosure of various coating materials, but those materials are to be used in the context of a panel including

an intumescent material, a layer specifically excluded by the present claims and by Friedman.

The rejection has not cited to any disclosure or implication in Friedman to add the types of coatings claimed by applicants. The citations to the abstract and col. 2 describe additions to the resin layer and not a separate coating layer (*e.g.*, the "blends [of polymers can be] modified with additives" in the abstract; see also col. 4, ln. 50-53). The indeterminable "surface treatment" cited at col. 6, ln. 26, is not specifically exemplified or otherwise described by Friendman (even in the background section), and the Friedman disclosure teaches away from a physical coating because the "surface corona treatment" (abstract; col. 2, ln. 40; Example 13) is clearly a surface *treatment*, not a physical coating layer.

In light of the foregoing, withdrawal of the rejections is now believed to be in order, and such actions are earnestly solicited.